

Name: \_\_\_\_\_ Date: \_\_\_\_\_

### Polynomial Factoring EXAM (version 687)

1. The quadratic formula says if  $ax^2 + bx + c = 0$  then  $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ . Use the quadratic formula to solve the following equation.

$$x^2 - 12x + 54 = 0$$

Simplify your answer(s) as much as possible.

2. Express the product of  $9 - 4i$  and  $5 + 7i$  in standard form  $(a + bi)$ .

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3. Write function  $f(x) = x^3 + 6x^2 - x - 6$  in factored form. I'll give you a hint: one factor is  $(x - 1)$ .

4. Polynomial  $p$  is defined below in factored form.

$$p(x) = -(x + 7)^2 \cdot (x + 4) \cdot (x + 1)$$

Sketch a graph of polynomial  $y = p(x)$ .

